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Preparations of aqueous-based cleaning agents which form vesicles and which contain active agents, method for their production and their utilisation

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(54) Title: PREPARATIONS OF AQUEOUS–BASED CLEANING AGENTS WHICH FORM VESICLES AND WHICH CONTAIN ACTIVE AGENTS, METHOD FOR THEIR PRODUCTION AND THEIR UTILISATION

(54) Bezeichnung: VESIKELBILDENDE TENSIDHALTIGE REINIGUNGSZUBEREITUNGEN AUF WÄSSRIGER BASIS, VERFAHREN ZU IHRER HERSTELLUNG SOWIE IHRE VERWENDUNG

(57) Abstract

The present invention relates to preparations of aqueous–based cleaning agents, especially shower gels, foam bath preparations or shampoos. Said preparations contain active agents and well–known auxiliary agents and additives and a proprotion of at least one sterol. Said aqueous preparations containing active agents spontaneously form liposomal structures, especially when they are applied. The invention also relates to a method for producing such preparations containing active agents and to their utilisation as cleaning agents.

(57) Zusammenfassung

Die vorliegende Erfindung betrifft Reinigungszubereitungen auf wäßriger Basis, insbesondere Duschbäder, Schaumbadzusammensetzungen oder Shampoos, enthaltend Tenside sowie übliche Hilfs– und Zusatzstoffe und einen Anteil an einem oder mehreren Sterolen. Diese wäßrigen tensidhaltigen Zubereitungen bilden spontan, insbesondere bei der Anwendung, liposomale Strukturen. Die Erfindung betrifft ferner ein Verfahren zur Herstellung solcher tensidhaltiger Zubereitungen sowie die Verwendung dieser Zubereitungen als Reinigungsmittel.

Aqueous-based cleaning preparations which form vesicles and contain surfactants, process for their preparation and their use

The present invention relates to aqueous-based cleaning preparations, in particular shower preparations, foam bath compositions or shampoos, comprising surfactants and customary auxiliaries and additives and a proportion of one or more sterols. These aqueous surfactant-containing preparations spontaneously form liposomal structures, in particular during application. The invention further relates to a process for the preparation of such surfactant-containing preparations, and to the use of these preparations as cleaning agents.

Hydrous surface-active cleaning products and oil and cream preparations for showering or bathing having a more or less pronounced cleaning action or refatting are known to date.

Vesicular systems have found wide application in cosmetics and pharmacy as active ingredient carriers and skincare components. Thus, cosmetic liposome- or vesicle-containing gels and emulsions are known, and in the pharmaceutical sector liposome- and vesicle-containing dispersions are already prepared. Liposome-based cleaning products have also been described. For example, "Mederma Regulativ-Waschlotion Plus" is a standard commercial emulsion-based cleaning product containing liposomes. This preparation comprises O/W emulsifiers and a fatty phase, but no washing-active substances.

The formation of liposomes in bathing water from oil bath or oleogel preparations and bath tablets has likewise been described. For example, DE-A 42 05 548 describes bath and shower additives with vesicle-forming properties which contain fatty oils and/or

apolar substances and also has a content of one or more oil-soluble surfactants together with a content of one or more vesicle-forming lipids. The oil-soluble surfactants have a HLB value of from 6 to 13 and the vesicle-forming lipids have a HLB value between 2 and 6.

DE 196 02 346.7 describes shower oleogels having vesicle-forming properties which comprises more than 30% of one or more lipophilic components, 0.1 to 20% of vesicle-forming substances and customary auxiliaries and additives and also has an emulsifier system of one or more W/O and one or more O/W emulsifiers in the ratio of from 1:2 to 1:0.2.

Such lipid-containing cleaning agents, which aim to compensate for the loss of lipids from the skin which arises during the removal of soiling, are prepared by incorporating preprepared vesicle dispersions into the preparation or the liposomes, in particular in the case of use as bath additive, arise upon use as a result of water contact from the lipids present in the preparation.

Thus, in the aforementioned products either no surfactants are present or, where surfactants are present, particular systems of such in combination with oils which are intended to prevent interactions of the liposomal structures with surface-active substances in aqueous solutions such that they are not dissolved. Aqueous surfactant-containing preparations without a proportion of fatty oils or oil-containing components which form liposomal structures do not, however, currently exist. Also, for the preparation of liposomal structures in such cleaning products, use has hitherto been made in each case of vesicle-forming lipids, such as, for example, phospholipids, sphingolids or ceramides.

R.A. Wachter et al. describes in Parfümerie und Kosmetik, 75th Volume, No. 11/94, page 755 to 759, the use of naturally occurring phytosterols as plant active ingredients in cosmetics. Phytosterols can be obtained from various oils and fats, such as, for example, corn germ oil, rapeseed oil, soya oil, olive oil etc. and consist essentially of β-sitosterol, campesterol and stigmasterol. A mixed product, obtained from soya oil, of said three phytosterol components with a predominant proportion of β-sitosterol (58.1%) and 29.8% of campesterol and 4.5% of stigmasterol is known under the product name Generol® 122. Ethoxylated product variants of said phytosterols, in particular of Generol® 122 also exist. Depending on the degree of ethoxylation, a series of products having different properties is obtained, such as, for example, Generol® 122 E5 (5 mol of EO), which is predominantly hydrophobic, and products having a degree of ethoxylation of 10, 16 or 25.

The latter products have the properties of a typical O/W emulsifier. Consequently, the latter can be used as corresponding emulsifiers in O/W emulsions and as solubilizing agents, while the nonethoxylated product is suitable as W/O emulsifier or coemulsifier. In addition to their emulsifying property, phytosterols can also be used beneficially in cases of damaged skin or skin stressed by environmental influences, such as, for example, in the case of constitutional neurodermatitis or for sunburn symptoms. As well as the above-mentioned indication as emulsions, such products can also be used as hair rinses. The use of Generol-containing shampoos can improve the wet combability and shine of hair. Accordingly, said literature reference describes W/O skin creams for dry skin comprising, in addition to a customary W/O emulsifier and various oil components and consistency regulators and stabilizers,

a content of 1% of Generol® 122 as coemulsifier. In addition, a hair rinse is described therein which, in addition to the cationic emulsion base and consistency regulators and additives, has a content of an oil component, an O/W emulsifier and Generol® 122 in an amount of 1.0%. It is here also established that Generol® 122 in combination with longer-chain fatty acids, fatty alcohols or phospholipids is able to build up multilamellar vesicles or layers. It is assumed here that the phytosterols embed in the lamellar lipid layers. In contrast to Generol® 122, the ethoxylated Generol products are present in a layer arrangement. At water contents below 70%, lamellar phases develop, but as the water content is increased to more than 70%, a transition to multilamellar vesicles takes place, i.e. liposomes. However, surfactants must not be present.

However, body cleansing agents contain a proportion of surfactants, of which it is known (cf. DE 42 05 548 and WO 92/04010) that they may have negative effects on the stability of liposomes since, as is known, liposomal structures are solubilized by interactions with surface-active substances in aqueous solutions. It was thus not hitherto possible to formulate stable surfactant-containing aqueous systems, as are customary for cleaning products, with liposomal constituents without specific stabilizing measures.

US-A 5688752 describes cleaning and care compositions which, as well as surfactants, have a lipid composition of three components A, B and C in quite definite molar ratios, where A may be ceramides, phospholipids, pseudoceramides, glycolipids or polyethylene glycol esters, component B are long-chain hydrocarbons having polar head groups such as fatty acids, and component C are an auxiliary component for stabilizing any bilayers formed. Component C can, for example, be 3-β-sterol or cholesterol, sistosterol, stigmasterol or ergosterol.

With such products, the loss by the skin of lipids and thus drying-out should be reduced.

The discussion of the background to the invention herein is included to explain the context of the invention. This is not to be taken as an admission that any of the material referred to was published, known or part of the common general knowledge in Australia as at the priority date of any of the claims.

An object of the present invention is therefore to formulate an aqueous-based surfactant-containing cleaning system which does not comprise oil-containing components and nevertheless has liposomal structures in particular during use, as a result of which all advantages of cleansing and of skincare, as are known for surfactant-containing and lipid-containing products, can be achieved.

This object is achieved according to the invention by aqueous-based cleaning preparations comprising 1 to 60% of one or more surfactants which are, in particular, chosen from anionic and/or nonionic and/or amphoteric and/or cationic surfactants, also 0 - 5%, in particular 0.5 - 2%, of one or more conditioning agents, 0 - 5%, in particular 1 - 3%, of one or more stabilizers, 0 - 3%, in particular 0.1 - 1.5%, of one or more preservatives, 0 - 5%, in particular 0.1 - 2%, of one or more thickeners, and 0 - 20%, in particular 0.5 - 3%, of active ingredients, 0 - 1%, in particular 0.0005 - 0.01%, of dyes and 0 - 5%, in particular 0.5 - 2%, of one or more opacifiers or pearlizing agents, and which are characterized by a content of 0.001 - 15%, in particular 0.01 - 15%, very particularly preferably 0.1 - 10%, and in particular 0.5 - 5%, of one or more sterols.

Surprisingly, it was possible to show that using such aqueous surfactant-containing preparations of the given specific composition in the course of the preparation or application, liposomal structures spontaneously form from the individual constituents and remain present as such during the cleaning operation. This is in stark contrast to known oil-containing cleaning compositions from which, as described above, liposomes form upon use

in water. Here, the losses of skin lipids which arise as a result of surfactants during the removal of soiling can be compensated by the positive above-described effect of sterols. As a result, as well as the excellent cleaning action, the skin can be prevented from drying out. Surprisingly, it was possible to dispense with the use of oil components for this purpose.

The cleaning preparation according to the invention preferably comprises a mixture of anionic, nonionic and amphoteric, in particular anionic and amphoteric or anionic and nonionic surfactant(s).

Anionic surfactants for the described purpose are known and may preferably be chosen from alkyl sulfates (e.g. C10-C18) and/or the corresponding alkyl ether sulfates, in particular having 1 - 6 ethylene oxide groups in the molecule, sulfosuccinates, sulfosuccinamates, sarcosinates, isothionates, taurides, ether carboxylic acids, protein fatty acid condensates, alkylsulfonates and alkylbenzenesulfonates, monoalkyl phosphates, monoglyceride sulfates, amide ether sulfates, alkyl sulfoacetates, α-olefinsulfonates. The alkyl chains in said surfactants may here each contain eight to eighteen carbon atoms.

Particular preference is given to alkyl ether sulfates derived from fatty alcohols having 12 to 18 carbon atoms and a degree of ethoxylation of from 2 to 6, such as, for example, lauryl/myristyl ether sulfate, Na salt (e.g. Texapon® K 14 S spezial IS, Elfan® NS 243 S), ammonium lauryl ether sulfate (Zetesol® LA-2) or monoisopropanolammonium lauryl ether sulfate (Zetesol® 2056) and alkyl sulfate, e.g. sodium lauryl sulfate (Texapon® Z), ammonium lauryl sulfate (Texapon® ALS) or monoisopropanolammonium lauryl sulfate (Sulfetal® CJOT 60).

Also suitable are, in particular, succinic acid derivatives, such as sulfosuccinates and sulfosuccinamates having an alkyl radical of 8 - 22 carbon atoms, e.g. Wallasol®-L 29 (Disodium Laureth-3 Sulfosuccinate).

The amphoteric surfactant can be chosen, in particular, from alkylaminopropionates, alkyl-, alkylamido- and sulfobetaines and alkyl glycinates having a carbon chain length of from C8 to C22. Particular preference is given to the cocamidopropylbetaine known under the tradename Dehyton® K.

The nonionic surfactant is chosen, in particular, from alkanolamides, fatty acid ethoxylates, fatty alcohol ethoxylates, alkyl polyglucosides in particular having an alkyl radical of 8 - 16 carbon atoms, e.g. Plantacare®2000 UP (Decyl Glucoside), sorbitan esters, e.g. Tween®20 (Polysorbate 20), amine oxides, in particular fatty amine oxides having a C7 - C26 alkyl chain, e.g. Incromine Oxide® C30 (Cocamidopropylamine Oxide).
Also suitable are sorbitan esters, alkylphenol oxethylates (C8 - C22; optionally 4 - 20 ethylene oxide groups) or mixed condensates of ethylene oxide and propylene oxide (e.g. Pluronics® grades).

Those surfactants suitable for cleaning agents are also described, for example, in SÖFW Journal, Volume 120, 2-3/94, p. 115 to 116, issue 7/94, page 387, and in Cosmetics and Toiletries, Volume 108, 1993, p. 83 - 89, and in SÖFW, Volume 117, No. 1 from 1991, p. 3 - 7 or in the monograph by K. Schrader, Grundlagen und Rezepturen der Kosmetika [Cosmetic bases and formulations], 2nd edition (1989, Hüthig Buchverlag), p. 683 - 691).

Suitable cationic surfactants are quaternary ammonium compounds with carbon chain lengths usually between 12 and 22, such as, for example, steartrimonium chloride or pyridinium salts, e.g. cetylpyridinium chloride.

Suitable as sterol are, in particular, phytosterols, such as, for example, those obtained from corn germ oil, rapeseed oil, soybean oil, olive oil etc. and consist predominantly of a mixture of β-sitosterol, campesterol and stigmasterol in varying proportions by weight, as described, for example, by R.A. Wachter (cf. p. 4, para. 4 of this application). Also suitable is cholesterol and derivatives thereof, e.g. dihydrocholesterol or cholesterol esters such as cholesteryl acetate. Particularly suitable as phytosterol is a product with the tradename Generol® 122 N (refined soya sterol). Also preferred are ethoxylated sterols of said type having a degree of ethoxylation of from 5 to 30, such as, for example, Generol® 122 N E5D, E10, E16, E25D (ethoxylated soya sterols) or Nikkol® DHC-15 and -30 (ethoxylated dihydrocholesterol).

Particular preference is given to amounts of from 0.5 to 5%, in particular 0.5 to 3% and preferably 0.5 to 2%, of said sterol(s). Very particular preference is given to a mixture of nonethoxylated phytosterol, e.g. Generol® 122 N and a phytosterol ethoxylated with 5 units, such as, for example, Generol® 122 N E5D. Here, the proportion of ethoxylated sterol is preferably greater than or equal to the proportion of nonethoxylated sterol, in particular in the ratio 5 : 1% by weight to 1 : 1% by weight. Particular preference is given to a ratio of 3 : 1% by weight. Also preferred is the sole use of a nonethoxylated sterol, e.g. Generol® 122 N, in the given amounts, such as, for example, 1% by weight.

Particularly suitable surfactant amounts are 5 to 30%, in particular 7.5 to 25% and very particularly preferably 10 to 20% of surfactant or surfactants.

The composition according to the invention can further comprise customary auxiliaries and additives. These include cationic polymers as conditioning agents, such as, for example, Polyquaternium-22 (Merquat® 280), quaternized protein derivatives, such as Lauryldimonium Hydroxypropyl Hydrolized Soy Protein (constituent of Prota Flor® HSQ), silicone derivatives, e.g. Abil® B 8863, 8843 (Dimethicone Copolyol), protein hydrolysates and water-soluble proteins.

In addition, one or more stabilizers may be present in small amounts (0 to 5%). These include, for example, complexing agents, such as Trilon®BD (EDTA, Na salt), agents for adjusting the pH, e.g. citric acid, humectants, such as glycerol, inorganic salts, e.g. sodium chloride as viscosity regulator.

In addition, one or more preservatives and thickeners may, where appropriate, be present (0 to 5%). Suitable preservatives are, for example, iodopropynylbutyl carbamate, phenoxyethanol and further customary preservatives, such as, for example, p-hydroxybenzoic esters, formaldehyde and formaldehyde donors, sorbic and dehydracetic acid and salts thereof, isothiazolinones, 5-bromo-5-nitro-1,3-dioxane, methyldibromoglutanonitrile, etc.

Suitable thickeners are e.g. Volpo® L 3 (Laureth-3) or Antil® 208 (Laureth-3, Propylene Glycol, Acrylates/Steareth-50 Copolymer), Glucamate® DOE 120 (PEG-120 Methyl Glucose Dioleate), Comperlan® 100 (Cocamide MEA).

In particular, the cleaning preparation according to the invention may have one or more active ingredients in the amounts given. These include, for example, perfume oils or essential oils, active ingredient extracts and/or vitamins.

These include, in particular, mint oil, lime oil, orange oil, juniper oil, valerian oil, eucalyptus oil, thyme oil, palmarosa oil, rosemary oil, lavender oil, menthol, extracts of ginger, lime blossom, marigold, seaweed, aloe vera, echinacea, ivy leaf, and panthenol, hydroxyethyl salicylate, nicotinic ester. Here, depending on the intended effect, such as, for example, improvement of the hair or skin structure, increase of circulation, relaxation, aromatherapy and the like, a suitable combination of active ingredients can be added. Where appropriate, further refatting agents, such as fatty acid glycerides and ethoxylates thereof, e.g. PEG-6 Caprylic/Capric Glycerides (Softigen® 767) and/or dyes such as e.g. Patent Blue, Amido Blue, Orange RGL, Cochineal Red, Quinoline Yellow.

In a preferred embodiment, the compositions according to the invention can also comprise an additional proportion, e.g. 0.01 to 5%, of one or more vesicle-forming lipids. These include, in particular, lecithin, phospholipids, such as phosphatidylcholine, and ceramides, such as e.g. ceramide-2, -3, -6 and sphingolipids, such as e.g. Proceramide® L, Ceraderm® S, Ceraveg®.

Particular preference is given to lecithin (e.g. soya lecithin), phosphatidylcholine, phosphatidylserine or -diethanolamine or mixtures thereof.

The cleaning preparations according to the invention are prepared by melting the sterol(s) in the aqueous surfactant solution. The preparation is then stirred

until cold. Where appropriate, active ingredients and other auxiliaries and additives are incorporated over the course of the preparation. Temperatures suitable for this purpose are between 60°C and 25°C.

The products obtained with the compositions according to the invention spontaneously form, in particular during application, liposomal structures. These can be detected by means of transmission electron microscopy (TEM) following freeze fracture.

Using the cleaning preparations according to the invention, it is possible to use products with present liposomes as cleaning agents and care agents. The preparations according to the invention can be distributed very readily. They have good cleaning and foaming properties, a pleasant feel on the skin, and favorable odor properties. They thus satisfy the requirements placed on cosmetics.

The compositions according to the invention can be used, in particular, as shower preparation, foam bath or shampoo. The individual components can be combined in various ways depending on the intended use.

In addition, the products according to the invention have very good stability and can be prepared without the use of special and complex apparatuses and preparation processes, as are usually required for the preparation of liposomal articles. The consistency of the products can be adjusted as desired using small amounts of additives and auxiliaries which do not change the feel on the skin. The particular property of the sterols, in particular of the phytosterols, namely that, being plant raw materials, they have a positive effect on the nature of the hair and skin, may additionally achieve a further care effect in addition to the liposomal effect.

In this connection, it has surprisingly been found that, in particular, the presence of surfactants does not have a negative effect on the presence or the formation of the liposomes. This could not have been expected with regard to the prior art already described, in which it has been established that traditional liposomal structures of e.g. phospholipids are solubilized by such strongly surface-active O/W emulsifiers or surfactants.

By incorporating one or more of the abovementioned active ingredients it is possible, for example, to prepare indication shower preparations depending on the desired purpose. Thus, for example, a fortifying shower preparation containing eucalyptus oil, mint oil and echinacea extract; an invigorating shower preparation containing rosemary oil and lime oil, or a muscle relaxing shower preparation containing ginger extract, methyl nicotinate, hydroxyethyl salicylate and juniper oil can be prepared.

Throughout the description and claims of the specification the word "comprise" and variations of the word, such as "comprising" and "comprises", is not intended to exclude other additives, components, integers or steps.

The invention is illustrated in more detail by reference to the examples below. The examples are followed by the transmission electron micrographs of the products prepared according to the invention. Here, it is possible to clearly see the liposomal structures (spherical structures) in the product prepared according to the invention following dilution with water 1 part : 20 parts at 37°C.

I. Preparation of the preparations according to the invention.

The products according to Examples 1 to 9 below were prepared by melting the given sterol(s) in the aqueous surfactant solution, i.e. the solution of demineralized water and the given surfactants, at temperatures

between 80°C and 90°C. The mixture was then stirred until cold and, where appropriate, the other additives, active ingredients and auxiliaries given were incorporated in the order given at temperatures between 60°C and 25°C.

Example 1

INCI name / tradename	%
Sodium Myreth Sulfate, 27% strength	40.00
Cocamidopropyl Betaine, 31% strength	10.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Polyquaternium-22	1.00
Rosmarinus officinalis	1.00
Citrus aurantifolia	1.00
Laureth-3	1.00
Antil® 208 *	0.50
Disodium EDTA	0.10
Sodium Chloride	0.68
Preservatives, dyes	q.s.
Water, demin.	ad 100.00

* Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

Example 2

INCI name / tradename	%
Sodium Laureth Sulfate, 28% strength	30.00
Cocamidopropylamine Oxide, 30% strength	10.00
Sodium Lauryl Sulfate, 90% strength	3.50
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Polyquaternium-22	1.00
Rosmarinus officinalis	1.00
Citrus aurantifolia	1.00
Laureth-3	0.60
Antil® 208 *	0.20
Disodium EDTA	0.10
Sodium Chloride	0.51
Preservatives, dyes	q.s.
Water, demin.	ad 100.00

* Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

Example 3

INCI name / tradename	%
Ammonium Lauryl Sulfate, 27% strength	10.00
Sodium Laureth Sulfate, 28% strength	30.00
Cocamidopropylamine Oxide, 30% strength	10.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Rosmarinus officinalis	1.00
Citrus aurantifolia	1.00
Glycerol	3.00
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

Example 4

INCI name / tradename	%
Sodium Laureth Sulfate, 28% strength	30.00
Cocamidopropylamine Oxide, 30% strength	10.00
Sodium Lauryl Sulfate, 90% strength	3.50
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Eucalyptus globulus	1.00
Mentha arvensis	0.125
Echinacea angustifolia	1.00
Glycerol	3.00
Perfume	0.50
Disodium EDTA	0.10
Sodium Chloride	0.30
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

Example 5

INCI name / tradename	%
MIPA-Lauryl Sulfate, 60% strength	5.00
Sodium Laureth Sulfate, 28% strength	30.00
Cocamidopropylamine Oxide, 30% strength	10.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.00
Polyquaternium-22	1.00
Glycerol	3.00
Valerianae officinalis	0.08
Cymbopogon martinii	0.15
Citrus dulcis	0.50
Lavandula angustifolia	0.15
Laureth-3	1.00
Perfume	1.00
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

Example 6

INCI name / tradename	%
MIPA-Lauryl Sulfate, 60% strength	10.00
Cocamidopropylamine Oxide, 30% strength	10.00
Ammonium Lauryl Sulfate, 27% strength	20.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Eucalyptus globulus	1.00
Mentha arvensis	0.125
Echinacea angustifolia	1.00
Glycerol	3.00
Antil® 208 *	1.50
Perfume	0.50
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

* Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

Example 7

INCI name / tradename	%
MIPA-Lauryl Sulfate, 60% strength	5.00
Sodium Laureth Sulfate, 28% strength	30.00
Cocamidopropylamine Oxide, 30% strength	10.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Rosmarinus officinalis	1.00
Citrus aurantifolia	1.00
Glycerol	3.00
Antil® 208	1.00
Perfume	0.50
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

Example 8

INCI name / tradename	%
MIPA-Lauryl Sulfate, 60% strength	20.00
Cocamidopropylamine Oxide, 30% strength	10.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Eucalyptus globulus	1.00
Mentha arvensis	0.125
Echinacea angustifolia	1.00
Glycerol	3.00
Antil® 208 *	1.50
Perfume	0.50
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

* Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

Example 9

INCI name / tradename	%
Ammonium Laureth Sulfate, 24% strength	10.00
Cocamidopropylamine Oxide, 30% strength	10.00
Ammonium Lauryl Sulfate, 27% strength	20.00
PEG-5 Soybean Sterol (Generol® 122N E5D)	1.50
Soybean Sterol (Generol® 122N)	0.50
Cocamide MEA	1.50
Polyquaternium-22	1.00
Methyl Nicotinate	0.005
Glycol Salicylate	1.00
Juniperus communis	0.10
Pinus	0.40
Rosmarinus officinalis	0.40
Zingiber officinalis	0.20
Glycerol	3.00
Antil® 208	0.50
Perfume	0.50
Disodium EDTA	0.10
Preservatives, dyes, citric acid	q.s.
Water, demin.	ad 100.00

Acrylates/Steareth-50 Copolymer + Propylene Glycol + Laureth-3

II. Detection of the liposomal structures in the preparations according to the invention

Figures 1 - 9 below show the liposomal structures (spherical shapes) of the preparations according to Examples 1 - 9 by transmission electron microscopy following freeze fracture.

List of transition electron micrographs

Example 1 = No. 2778

Example 2 = No. 2831

Example 3 = No. 2841

Example 4 = No. 2726

Example 5 = No. 2922

Example 6 = No. 2928

Example 7 = No. 2925

Example 8 = No. 2913

Example 9 = No. 2952

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An aqueous-based cleaning preparation comprising 1 to 60% of one or more surfactants chosen from anionic and/or nonionic and/or amphoteric and/or cationic surfactants with exception of esterquats, characterized in that the cleaning preparation comprises 0.001 - 15% of a mixture of a sterol and an ethoxylated sterol.

2. The cleaning preparation as claimed in claim 1, characterized in that 0 - 5% of one or more conditioning agents, 0 - 5% of one or more stabilizers, 0 - 3% of one or more preservatives, 0 - 5% of one or more thickeners, and 0 - 20% of active ingredients, 0 - 1% of dyes and 0 - 5% of one or more opacifiers or pearlizing agents are present.

3. The cleaning preparation as claimed in claim 1 or 2, characterized in that it is a shower preparation, a foam bath composition or a shampoo.

4. The cleaning preparation as claimed in any of claims 1 to 3, characterized in that one or more phytosterols are present as sterol.

5. The cleaning preparation as claimed in any of claims 1 to 4, characterized in that as ethoxylated sterol one having a degree of ethoxylation of 5 - 30 (E0) is present.

6. The cleaning preparation as claimed in any of claims 1 to 5, characterized in that the proportion of ethoxylated sterol is greater than or equal to the proportion of nonethoxylated sterol.

7. The cleaning preparation as claimed in any of claims 1 to 6, characterized in that a mixture anionic and amphoteric or anionic and nonionic surfactants is present.

8. The cleaning preparation as claimed in any of claims 1 to 7, characterized in that the anionic surfactant is chosen from an alkyl sulfate, alkyl ether sulfate, sulfosuccinate, sulfosuccinamate, sarcosinate, isethionate, tauride, ether carboxylic acid, protein fatty acid condensate, alkylsulfonate and alkylbenzenesulfonate, monoalkyl phosphate, monoglyceride sulfate, amide ether sulfate, alkyl sulfoacetate, α-olefinsulfonate, the amphoteric surfactant is chosen from alkylaminopropionates,

alkyl-, alkylamido-, sulfobetaines, alkyl glycinates and the nonionic surfactant is chosen from alkanolamides, fatty acid ethoxylates, fatty alcohol ethoxylates, alkyl polyglucosides, amine oxides, sorbitan esters, alkylphenol oxethylates, mixed condensates of ethylene oxide and propylene oxide.

9. The cleaning preparation as claimed in any of claims 1 to 8, characterized in that it comprises 10 - 25% of surfactant.

10. The cleaning preparation as claimed in any of claims 1 to 9, characterized in that it has 0.5 to 5% of sterol and ethoxylated sterol.

11. The cleaning preparation as claimed in any of claims 1 to 10, characterized in that 0.01 - 5% of lecithin, phosphatidylcholine, sphingolipid and/or ceramide are present.

12. A process for the preparation of a cleaning preparation as claimed in any of claims 1 to 11, characterized in that a solution of water and surfactants is prepared, heated to the melting temperature of the sterols, said sterols are melted therein, then the mixture is stirred until cold and then, as necessary, further additives, auxiliaries and active ingredients are incorporated at temperatures of from 60°C to 25°C.

13. The use of cleaning preparations as claimed in any of claims 1 to 11 as washing gels, shower preparations, foam baths or shampoos.

14. A cleaning preparing according to claim 1 substantially as hereinbefore described with reference to the examples.

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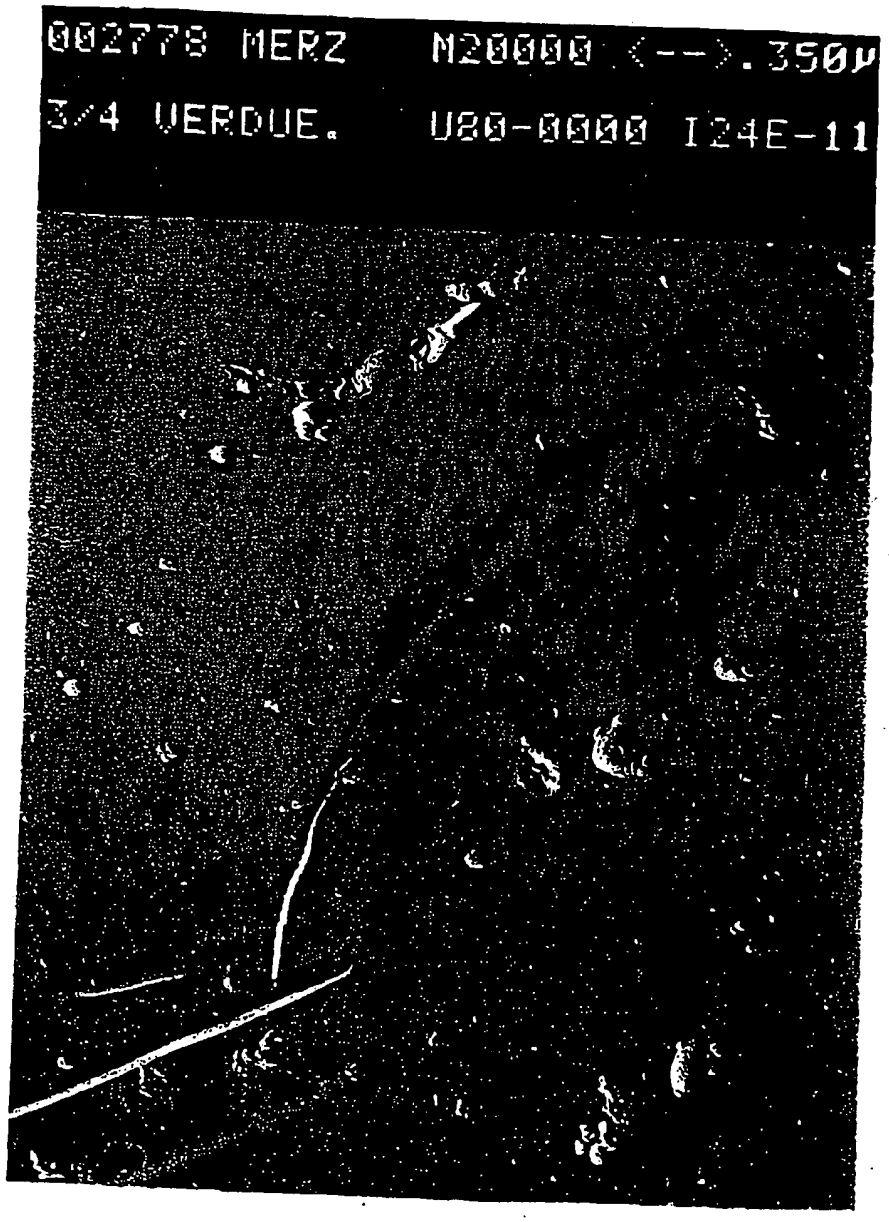
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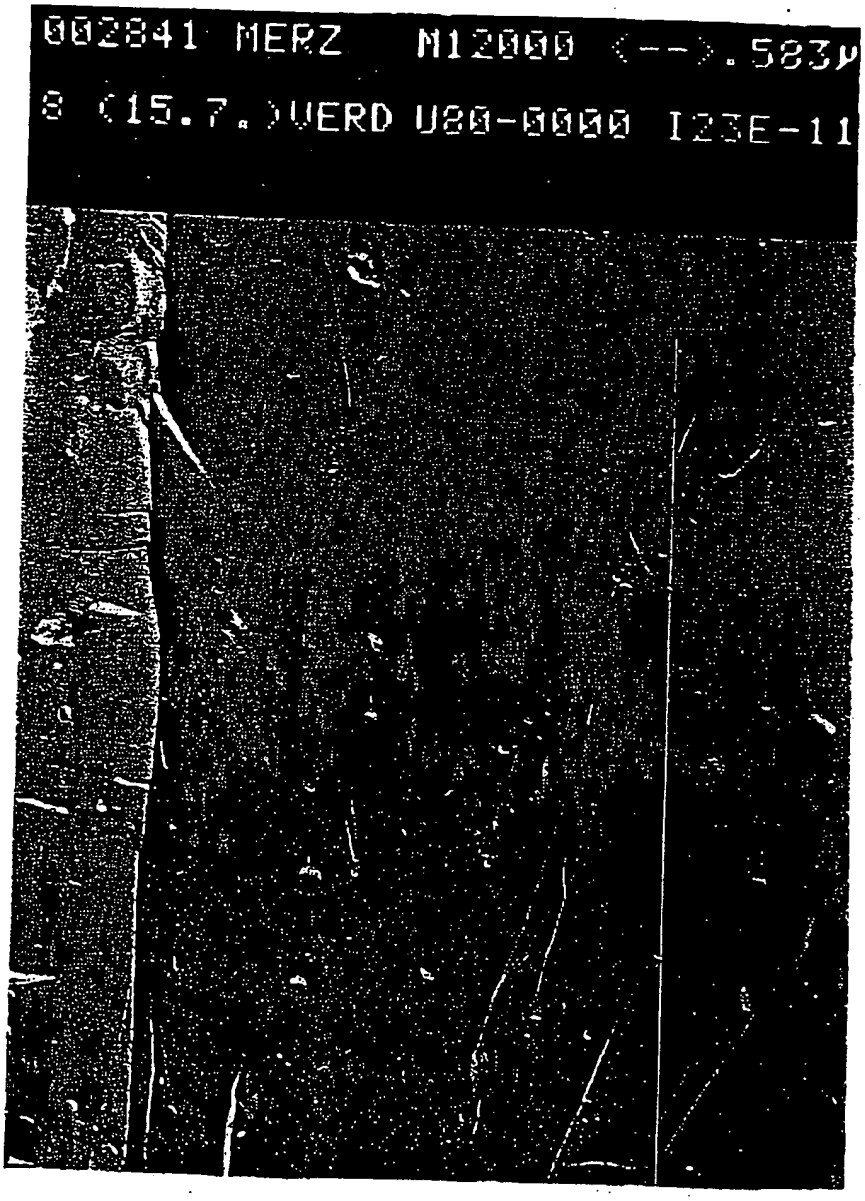
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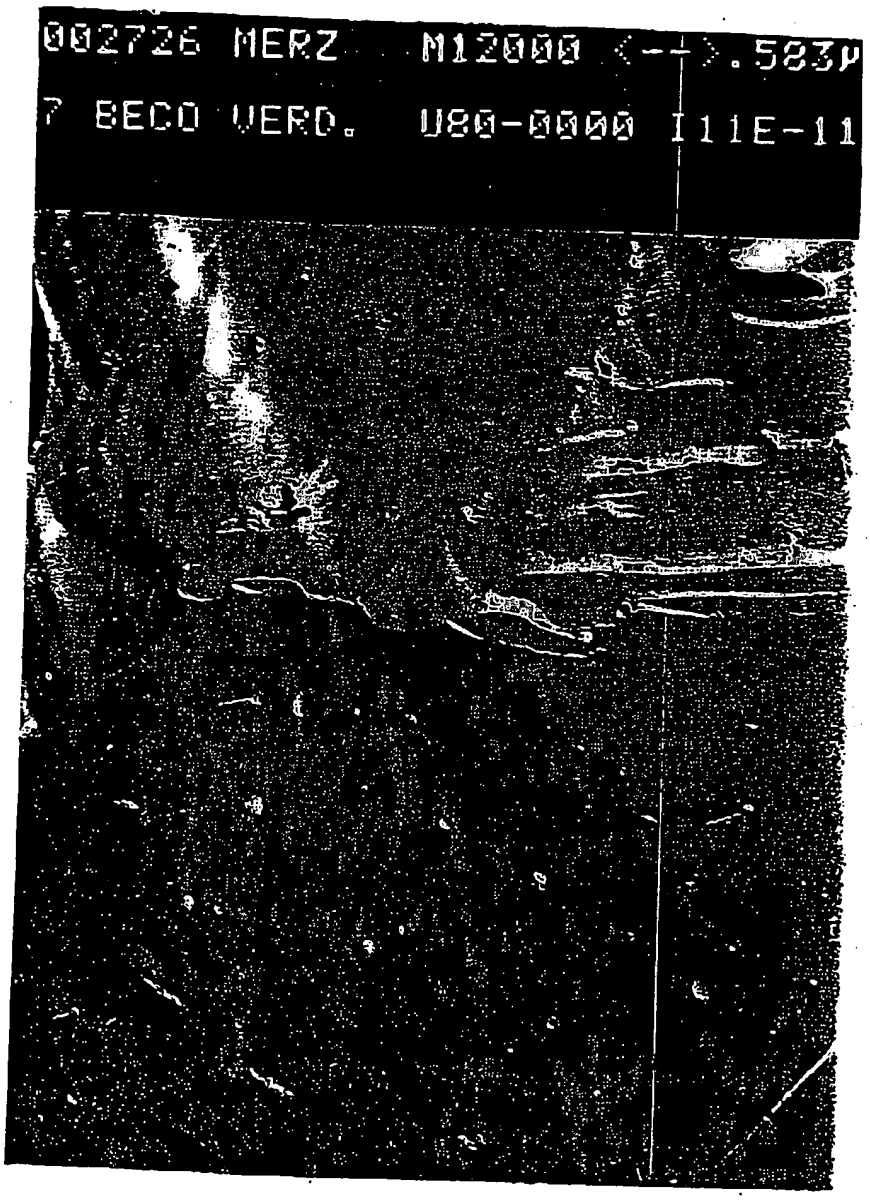
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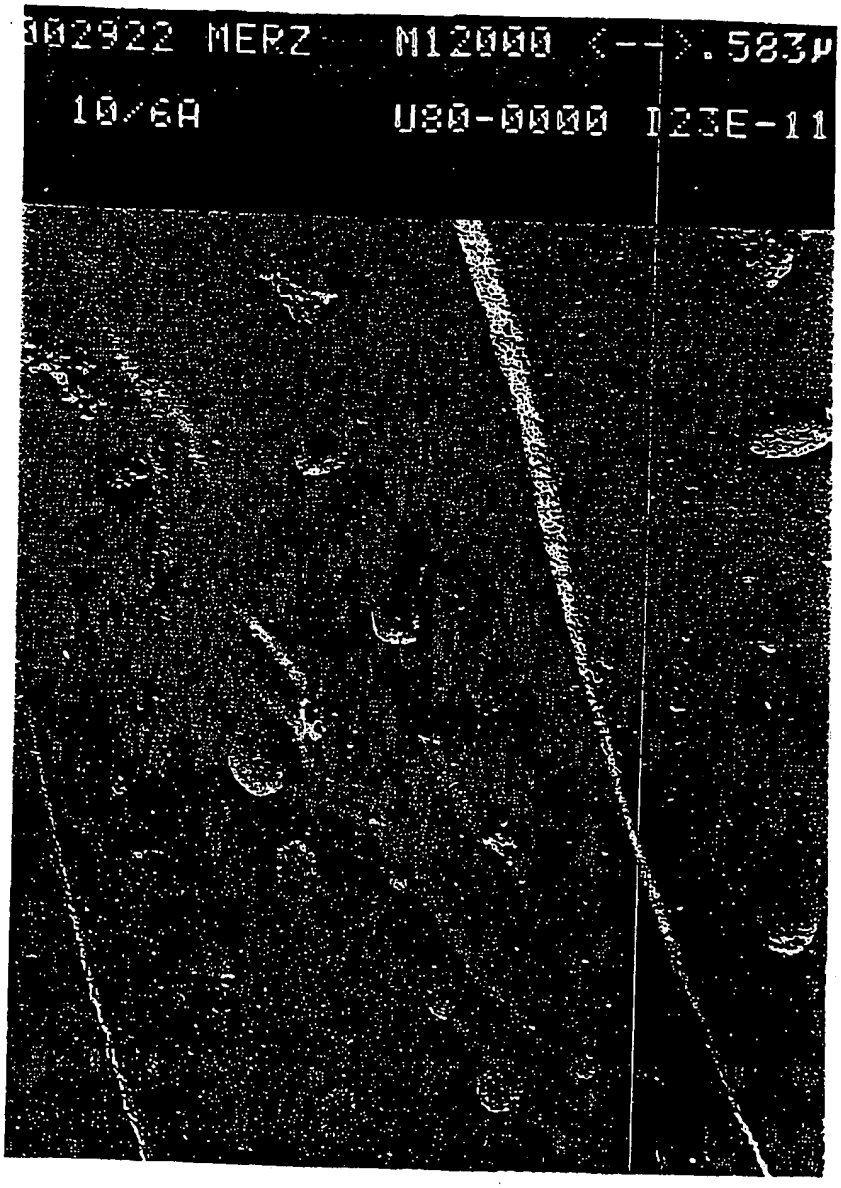
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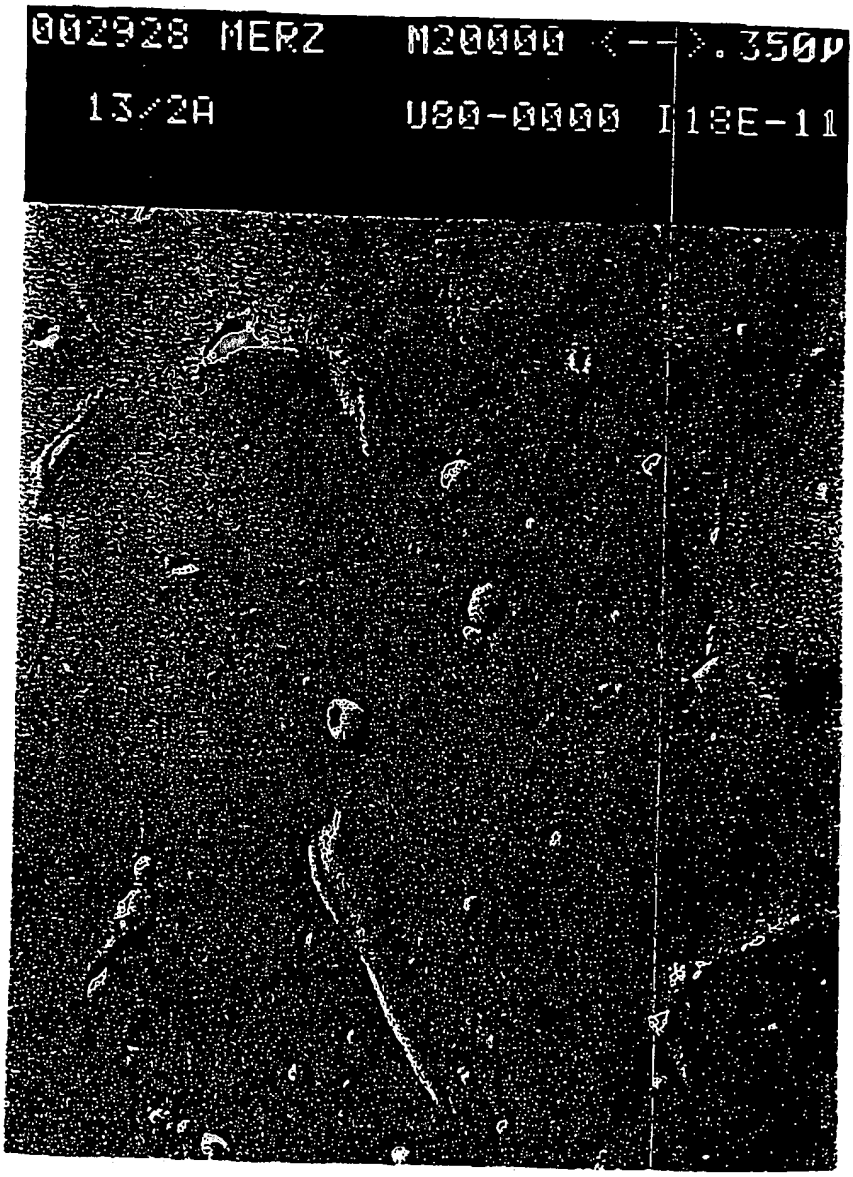
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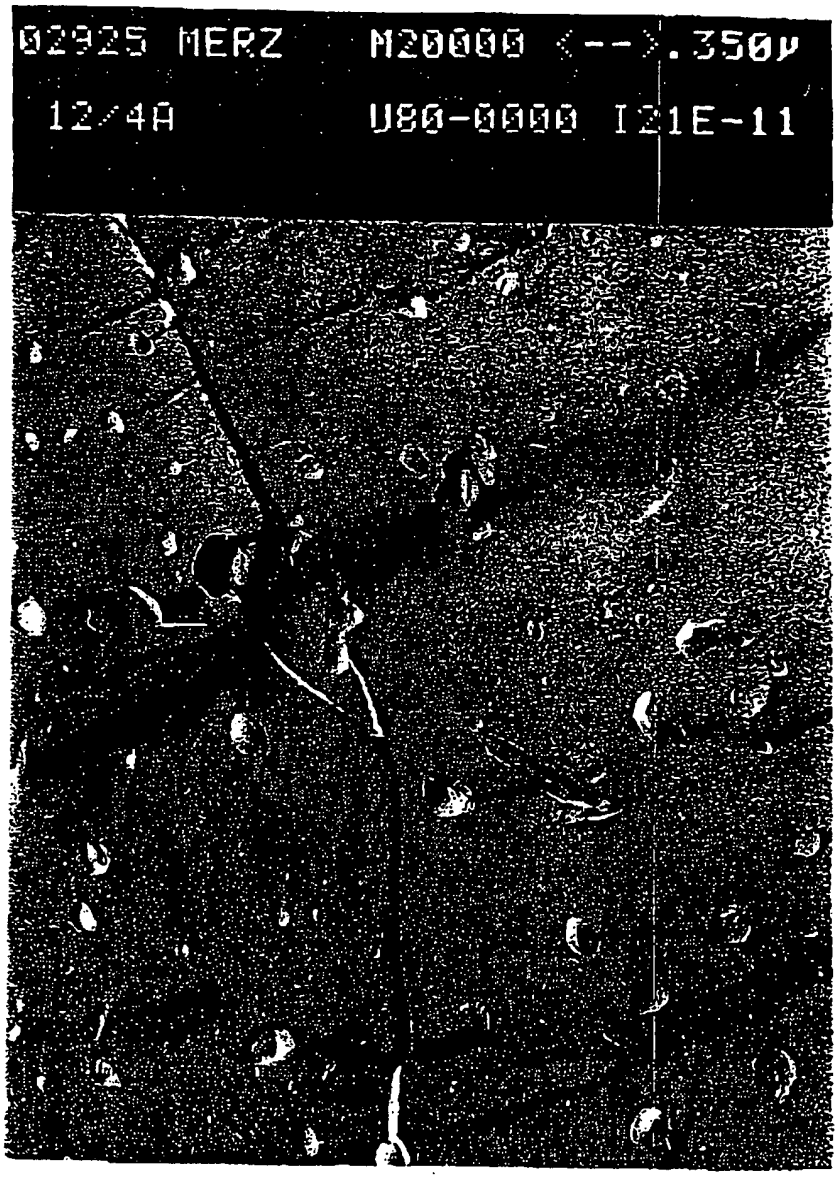
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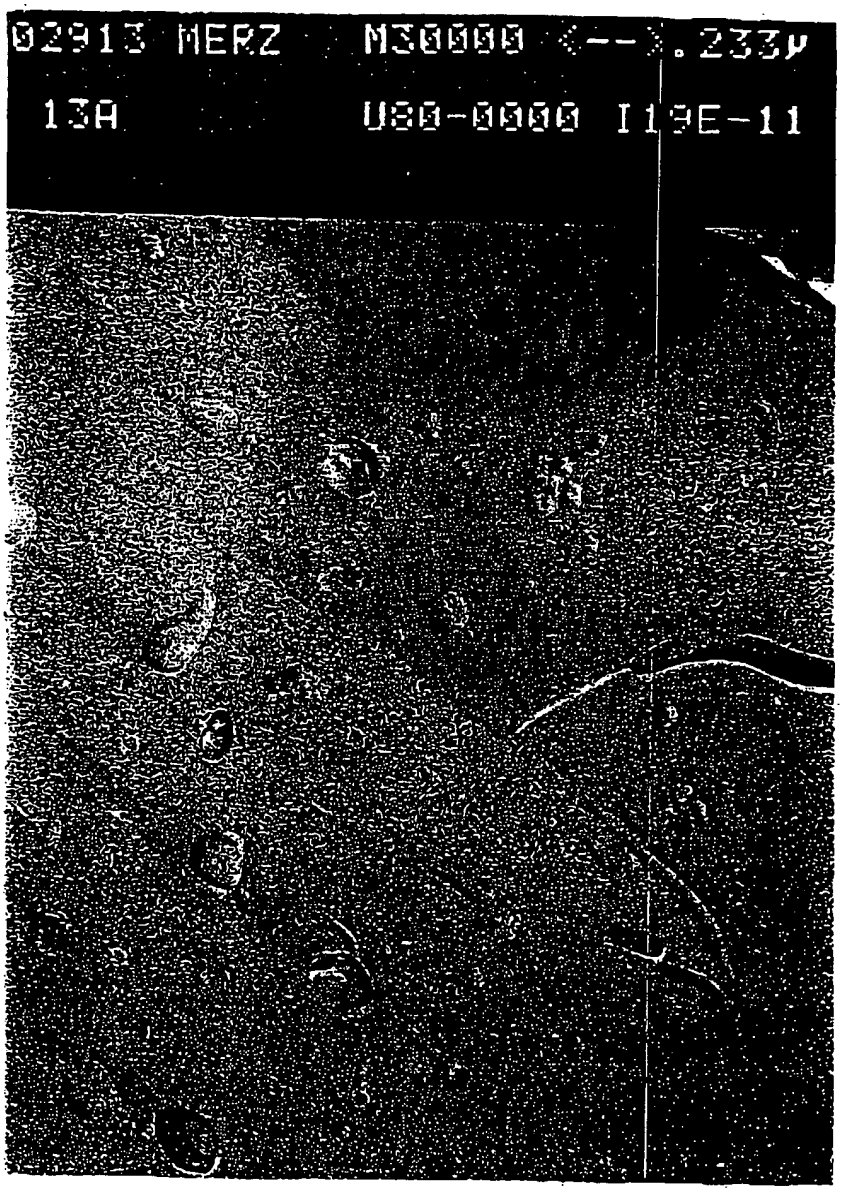
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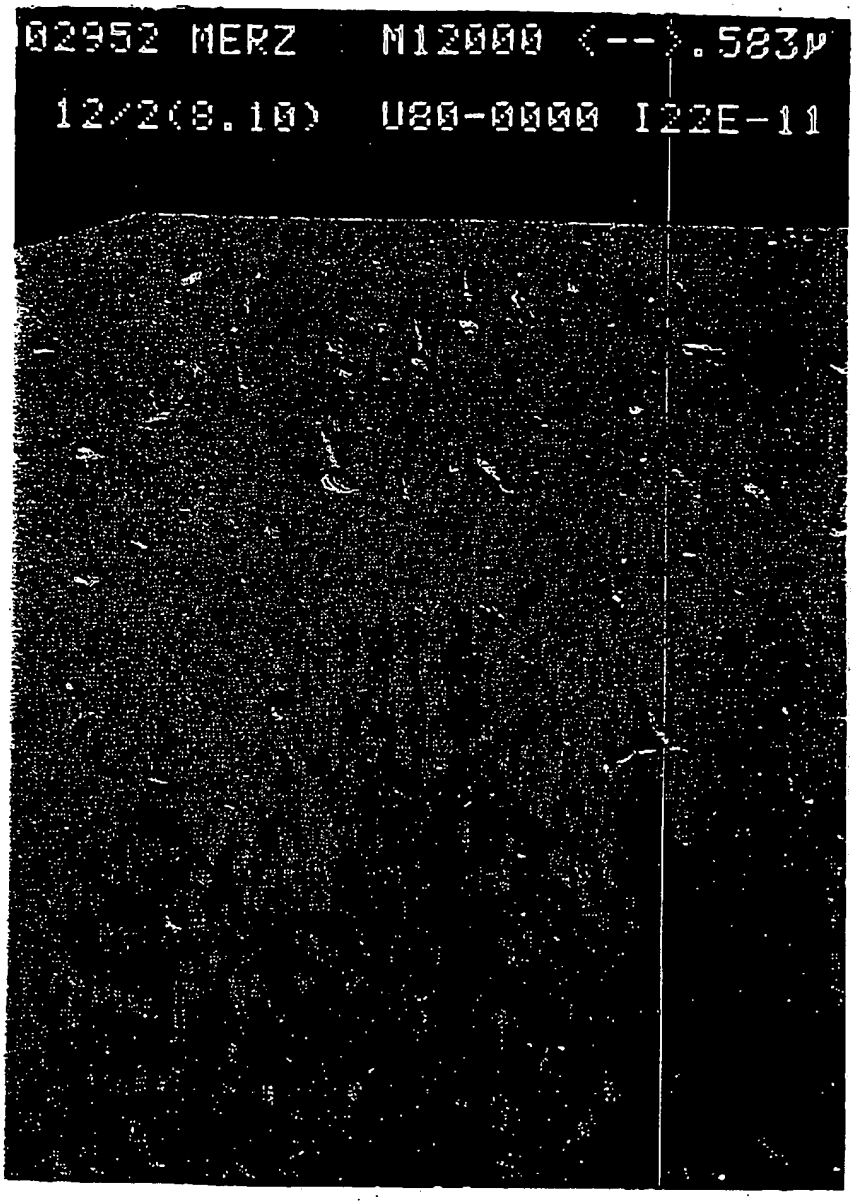
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